

Designing by the book to manage development risks

A new book written by **Preston Smith** and **Guy Merritt** aims to advise teams and managers on how to manage the risks encountered during the product development process

When developing a product, few design teams put enough attention into managing risk and as a result will encounter significant problems—for example, a product which ends up over budget or is not delivered on schedule. To aid product development teams and managers, Preston Smith and Guy Merritt have written “Proactive Risk Management: Controlling Uncertainty in Product Development”.

Project risks

“Design engineers typically look at project risk narrowly and often believe that they are managing risk in their work when they apply FMEA (failure mode and effects analysis)” says Preston Smith, co-author of the book. “This is fine, as far as it goes, but it only looks at what could fail in a design while failures in the design project get overlooked.”

What, for instance, if a key supplier goes out of business? What if management shuffles priorities in the test lab so that you can't get the lab time needed to complete the project on time? Such problems as these cause projects to be late and therefore overrun their budgets.

Project risks are critical in OEM design because a customer's schedule and budget depends on the ability for the components to be delivered. If this fails, the project can suffer and consequently, any problems encountered will be amplified even further in the context of the project.

Controlling uncertainties

Proactive Risk Management aims directly at controlling such uncertainties in project development and provides a process for identifying, analysing, prioritising, resolving and monitoring project risks. Although this process is similar to the one used for FMEA, it is aimed at the success of the whole project as a business endeavour rather than just looking at the design for safety and reliability risks.

This book makes two essential contributions that will not be found in other books written about this subject. Firstly, it strongly bases each risk on the facts that support it which, while it may seem obvious, is a fatal flaw in most project risk management work.

Risk tends to be quite subjective—your opinion of what might happen, how often, and with what consequence—and if you operate at the opinion level, you have great difficulty in reaching agreements and thus in taking a concerted action against the risk.

Proactive Risk Management obligates you to base your risks and their resulting action plans on fact by employing a model of risk. This model can be thought of as a

template that requires you to list the facts that lead you to believe in that particular risk. Your debate can then be on the underlying facts which can be either proven or disproven.

The second critical contribution is its emphasis on implementing the methodology in actual companies. While most managers recognise the value of controlling uncertainty in the design stage, they do not carry it through. The book shows how to build project risk management into each stage of design so that you realise the benefits of the initial risk identification.

Management and guidance

The book has been designed to lead the reader through the five-step risk management process. Alongside the five-step model, it offers guidance for identifying drivers of risk, appropriate quantification of key risk factors, clear distinctions of the difference between a risk and an issue, supporting tools and strategies, and emphasis on the cultural and organisational impediments that can undermine risk management implementation. The authors also suggest variations that the reader can make to adapt the process to meet their own needs.

During development of the book, Smith and Merritt involved an international customer council of 46 individuals who suggested additions or changes to structure of the book, completed 134 reviews of draft chapters, and provided examples from their own experience.

The bulk of the material in the book, therefore, comes directly from the experiences of project teams in applying the standard risk model. The principles and concepts are presented first, followed by case studies to illustrate these.

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